

Remarks

Claims 1-32 were pending in the present application. Claims 25 - 32 have been withdrawn, and claims 5 and 15 have been amended. Accordingly, claims 1-24 remain pending and under active examination. Reconsideration and allowance of the claims is respectfully requested in view of the amendments and remarks provided herein.

Election/Restriction

During a telephone conversation on February 27, 2009, a provisional election was made with traverse to elect Group I in response to a restriction of the claims into Group I (claims 1-24) and Group II (claims 25-32). The Examiner has indicated the Groups I and II lacked unity of invention because the common technical feature in both groups was the use of calcium and ascorbic acid to preserve cut apple pieces, and this feature was known in the art. In response to the requirement to elect a single group, Applicants hereby formally elect group I, and withdrawn the claims of group II. However, Applicants respectfully traverse the restriction of the claims.

A national stage application containing different categories of invention is considered to have unity of invention if the claims are drawn to a specified combination of categories, such as a product and a process of use of said product. The present claims 1-24 and 25-32 represent a product and a process of use of said product, and therefore represent a combination of categories that typically should be found to have unity of invention.

Furthermore, Applicants note that claim 25 recites use of “a solution made from the composition according to claim 1” and claim 26 recites use of “the solution according to claim 11,” and that remaining claims 27-32 all depend from these claims. Applicants further note that both claim 1 and claim 11 recite a “molar ratio between ascorbic acid and the calcium ions [that] is between about 2.8:1 and 4.0:1.” For the reasons provided in more detail below, this molar ratio represents a special technical feature that distinguishes the claims from the prior art. Accordingly, because all of the claims include the same special technical feature and are an allowed combination of categories, claims 1-32 possess unity of invention and the restriction of the claims into two groups should be withdrawn.

Claim Objections

The Examiner objected to claims 5 and 15 for not being written in acceptable Markush form. Applicants have amended the claims to address the Examiner's concerns. Accordingly, Applicants respectfully request that the objections to claims 5 and 15 be withdrawn.

Claim Rejections - 35 USC § 103

Claims 1-6, 10-16, and 20 have been rejected under 35 U.S.C. 103(a), as being unpatentable for reason of obviousness over Warren (US Patent No. 5,055,313). More specifically, the Examiner asserts that Warren teaches preserving cut apple slices with a solution containing ascorbic acid, calcium ions, magnesium ions, and citric acid, and that determining the amount of each ingredient is a matter of routine experimentation. Applicants respectfully traverse the rejection.

Independent claims 1 and 11 recite preservative compositions in which the molar ratio between the ascorbic acid and the calcium ions is between about 2.8:1 to about 4.0:1. Warren, on the other hand, does not provide any teaching or suggestion regarding the importance of particular ratios between ascorbic acids and calcium ions. Instead, Warren describes the functional roles of ascorbic acid (an antioxidant) and calcium ions (an enzyme inhibitor), and the concentration ranges of these compounds needed for them to be able to carry out their function.

Applicants, on the other hand, indicate that the ratio of the amounts of ascorbic acid and calcium ions is important, which is reflected by the ratio required by the claims. For example, from page 7, line 30 to page 8, line 26 of the application, the importance of the proper amounts of ascorbic acid and calcium ions in avoiding bitterness, providing suitable pH values, and enhancing textural attributes is described. Specifically, lines 7 and 8 on page 8 describe the importance of the ratios of ascorbic acid to calcium ions for enhancing texture (e.g., avoiding leatheryness). In addition, while Warren does not discuss ratios, the concentration ranges of antioxidant (e.g. ascorbic acid) and enzyme inhibitor (e.g., calcium chloride) given in Table I on column 4 of Warren or elsewhere in the patent only describe compositions in which the amount of calcium is greater than or equal to the amount of ascorbic acid. Applicant's ratios, on the other hand, are the reverse, and always provide higher amounts of ascorbic acid relative to calcium. Applicants ratios are thus not within the ratios described by Warren, which by

implication teaches away from the use of ratios in which the amount of ascorbic acid is higher than the amount of calcium ion. Furthermore, Applicants repeatedly stress the importance of reducing calcium levels to avoid bitterness, and increasing the levels of ascorbic acid to provide for faster diffusion into the apples. A teaching away from the claimed ratios, as well as the unexpected results obtained using the claimed ratios, both indicate that Applicants claims are nonobvious in view of the prior art. See *In re Geisler*, 116 F.3d 1465, 1471 (Fed. Cir. 1997) (which states that a presumption of obviousness is overcome where the prior art taught away from the claimed invention), and *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990) (which states that a presumption of obviousness is overcome where there are new and unexpected results relative to the prior art). Accordingly, because claims 1 and 11 are nonobvious for the reasons provided, and the rejected dependent claims include the elements of either claim 1 or 11, Applicants respectfully request that the rejection of claims 1-6, 10-16, and 20 as being obvious over Warren be withdrawn.

Claims 7-9, 17-19, and 21-24 have been rejected under 35 U.S.C. 103(a) as being unpatentable for reason of obviousness over Warren in view of Chen (U.S. Patent No. 5,925,395). More specifically, the Examiner has asserted that for claims 7-9 and 17-19, Warren teaches the limitations of the claims from which these claims depend, outside of calcium hydroxide or calcium carbonate being the source of calcium ions, and that Chen teaches preservative solution containing mixtures of calcium salts including calcium hydroxide and calcium carbonate. Furthermore, with regard to claims 21-24, the Examiner asserts that while Warren does not teach the use of magnesium chloride, the use of calcium chloride or ascorbic acid in the amount claimed, or the claimed pH range, Chen teaches ranges for all of these features and that it would have been obvious to modify the teachings of Warren in view of Chen to arrive at the present invention. Applicants respectfully traverse the rejection.

With regard to claims 7-9 and 17-19, teaching the use of calcium hydroxide or calcium carbonate as a source of calcium ions does nothing to overcome the indicia of nonobviousness described above with regard to Warren alone. Accordingly, claims 7-9 and 17-19 should not be rejected as obvious.

Claim 21 and claims 22-24 which depend therefrom require some additional discussion because they do not specifically recite the requirement of a molar ratio between the ascorbic acid and the calcium ions being between about 2.8:1 to about 4.0:1. However, these claims continue to recite a composition in which the amount of ascorbic acid is significantly higher than the amount of calcium ion. For example, in claim 21, using the lowest amount of ascorbic acid (5.6%) and the highest amount of calcium ions (1.5% - combining calcium chloride dihydrate and calcium hydroxide) provides a minimum ratio of 3.7:1 ascorbic acid to calcium ion. Warren does not teach compositions in which the amount of ascorbic acid is higher than the amount of calcium ion, and Chen simply teaches a wide range of ratios of ascorbic acid to calcium ions, with no preference for high ratios of ascorbic acid to calcium ions. The same argument applies to the specific amounts claimed in claims 21-24, i.e., the wide ranges of the weight percents for the components described in Chen do not render obvious the particular weight percentages claimed in claims 21-24 in view of the unexpected results obtained using these amounts.

Accordingly, for the reasons provided above, Applicants respectfully request that the rejection of claims 7-9, 17-19, and 21-24 under 35 U.S.C. 103(a) as a result of being obvious over Warren in view of Chen be withdrawn.

In the event that there are any questions concerning this response, or the application in general, the Examiner is respectfully urged to telephone the undersigned so that prosecution of the application may be expedited.

Respectfully submitted,

Date: June 11, 2009

By: /Raymond N. Russell/

Raymond N. Russell, Ph.D.,

Reg. No. 52,185

(216) 622-8373